

ToolkitConcept: Eliminating ParameterSect. 6.2Rule/Formula:

Solve for t on the x -equation, then substitute for t in the y -equation.

Example

$$x = t + 2 \quad y = t^2 \Rightarrow y = (x - 2)^2$$

$t = \underline{x - 2}$

Example 2

$$x = t^2 \quad y = t + 1, \quad -2 \leq t \leq 1$$

$t = \underline{\pm \sqrt{x}}$

$$y = \pm \sqrt{x} + 1$$

Reminder

Endpoints: (see above)

$$x = (-2)^2 = 4 \quad y = -2 + 1 = -1$$

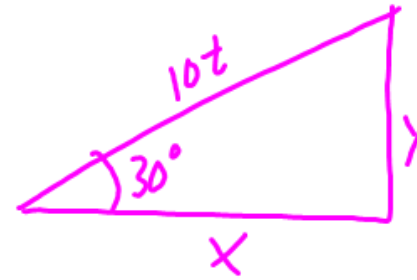
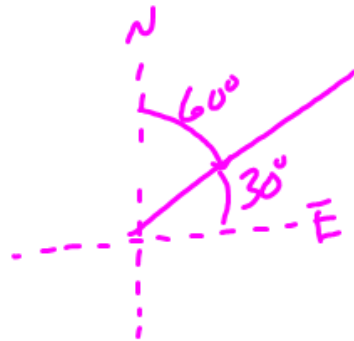
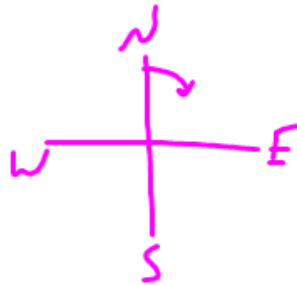
$(4, -1)$

$$x = (1)^2 = 1 \quad y = 1 + 1 = 2$$

$(1, 2)$

6.3

#10 Bearing heading \rightarrow clockwise from North



$$10t \cdot \cos(30) = \frac{x}{10t} \cdot 10t$$

(a)

$$\boxed{10t \cos(30) = x} \quad \text{- horizontal}$$

$$10t \sin(30) = \frac{y}{10t} \cdot 10t$$

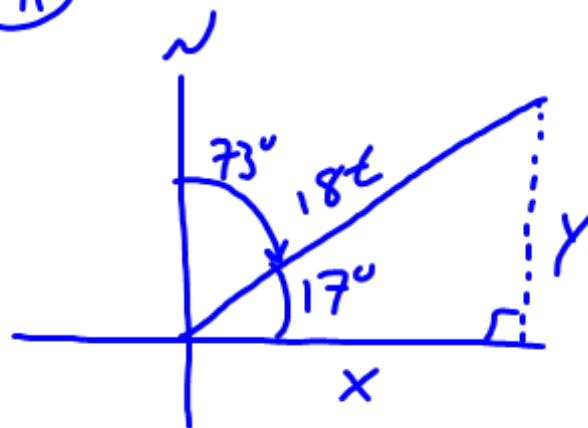
$$\boxed{10t \sin(30) = y} \quad \text{- vertical component}$$

(b) $10t = 100$
 $t = 10 \text{ hrs.}$

(c)

10 - speed
 t - time
 30° - angle
 x - east dist.
 y - North dist.

⑪



$$x = 18t \cos(17^\circ)$$

$$y = 18t \sin(17^\circ)$$

$$\frac{18t}{18} = \frac{750}{18}$$

$$t = 41.\overline{66} \text{ hrs.}$$

⑫

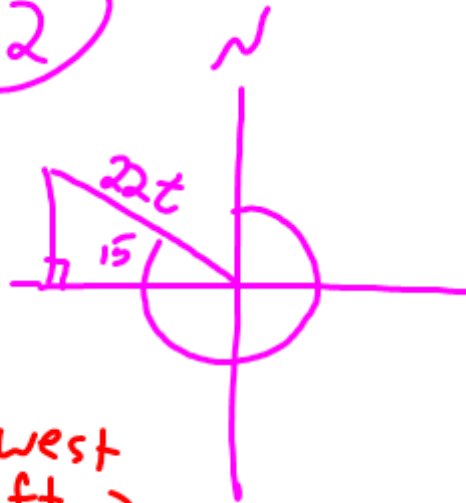
$$x = 18\left(41\frac{2}{3}\right) \cos(17)$$

$$\approx 717.2 \text{ miles East}$$

$$y = 18\left(41\frac{2}{3}\right) \sin(17)$$

$$\approx 219.3 \text{ North}$$

(12)

west
1 ft

$$X = 22t \cos(15^\circ)$$

$$Y = 22t \sin(15^\circ)$$

$$(b) \quad 510 = 22t$$

$$t = 23.2 \text{ hrs.}$$

$$(c) \quad x = -22(23.2) \cos(15^\circ)$$

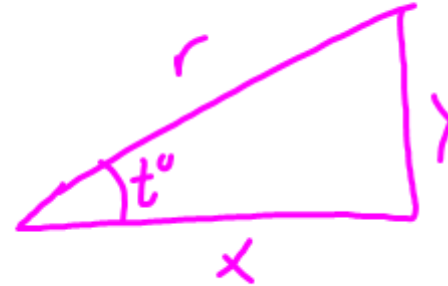
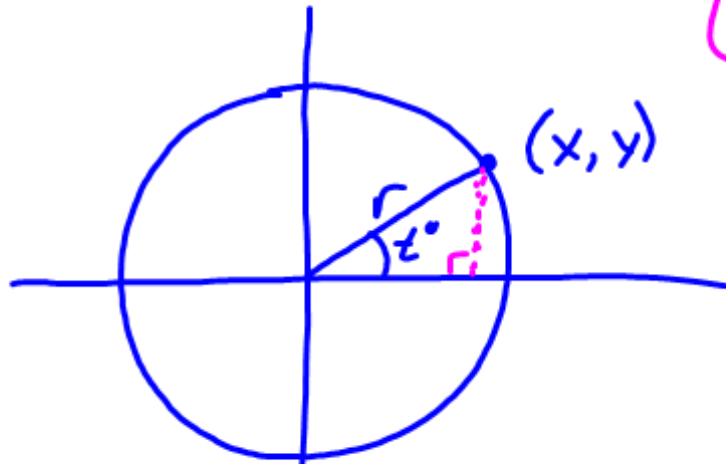
$$x \approx -493$$

west

$$Y = 22(23.2) \sin(15^\circ)$$

$$Y \approx 132$$

6.4



$t = \text{degrees}$

$$x = r \cos(t)$$

$$y = r \sin(t)$$

$t = \text{degrees}$
 $r = \text{radius}$

$t_{\text{-min}} \rightarrow$ where 1st pt will graph

$t_{\text{-max}} \rightarrow$ how much of a circle you want

$t_{\text{-step}} \rightarrow 360 \div \# \text{ of steps}$

Quiz

- Eliminating Parameter
- Like #1 & 2 on 6.3
- Like #11, 12a-c on 6.3
- endpoints

Homework

- Sect. 6.4 # 1, 3a, b, e, 6
- Study for Quiz